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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/528,010

11/16/2005

Karl-Heinz Danger

HOEF-37546

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86378

7590

10/29/2009

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EXAMINER

LEWIS, RALPH A

ART UNIT

PAPER NUMBER

3732

NOTIFICATION DATE

DELIVERY MODE

10/29/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patdocket@pearne.com

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<b>Office Action Summary</b>	<b>Application No.</b> 10/528,010	<b>Applicant(s)</b> DANGER ET AL.	
	<b>Examiner</b> Ralph A. Lewis	<b>Art Unit</b> 3732	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 June 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 26-34, 36-45, 47 and 49-63 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 26-34, 36-45, 47 and 49-63 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

Art Unit: 3732

### **Rejections based on Prior Art**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 26-34, 36, 42-45, 47, 49, 51-55 and 57-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leins et al (US 5,641,251) in view of Lund et al (US 5,447,208).

Leins et al disclose a ceramic drill bit comprised of a working tip member and a shaft. The tip is capable of being detached from the shaft with a cutting tool. The ceramic drill bit includes cutting edges 3a and 3b which consist of the ceramic material. The Leins et al drill bit meets all the limitations of independent claims 26 and 51 except with those specifying a surface roughness for the drill bit of between 0.5 and 6 microns. Leins et al do not disclose the surface roughness of the drill bit but do suggest that the cutting edges are polished (note column 1, line 38). Lund et al teach that it is known in the prior art to form the smooth cutting edges of rotary drill bits to a 20-40 micro inches (.5 microns – 1 micron) roughness and that the smoother the cutting edge surface, the lower the friction at the cutting face which in reduce adhesion of chips and reduces flaw sites in the cutting face (note column 3, line 65- column 4, line 2). To have constructed the Leins et al ceramic drill bit so that the surface roughness of the cutting edges was within the prior art range claimed would have been obvious to one of ordinary skill in the

Art Unit: 3732

art in view of the teachings by Lund et al who teach that roughness within the range claimed are beneficial in improving the efficiency and lifetime of the tool. In regard to claim 43 it would have been obvious to have secured the Leins et al ceramic drill bit in a metal chuck.

In response to the present rejection, applicant argues that the Lund et al reference is nonanalogous to Leins et al and consequently the combination unobvious because the Lund et al reference is directed to drills used in subterranean drilling whereas the Leins et al reference is directed to drills used for machining parts. The examiner notes that the two references are directed to the common art of drill bits and the common problem of drilling holes, consequently they meet the analogous prior art requirements of obviousness.

Applicant further argues that Lund et al teaches the cutting surface be smoothed to a roughness of 10 micro inches (.25 microns) and discourages the prior art roughness of 20 micro inches – 40 micro inches (.5 microns – 1 micron). The examiner notes that in general the prior art does not disclose the particular roughness of the cutting edges of drill bits, however, here in Lund et al where it is discussed it is made clear that roughness levels on the order of those specifically claimed by applicant are known in the prior art and that the lower levels of roughness reduce friction and improve wear. To have merely constructed the prior art Leins et al drill bit with polished cutting surfaces so that the surface roughness approaches the roughness levels known in the prior art (as is evidenced by Lund et al) would have been obvious as a matter of routine practice to one having ordinary skill in the art.

Art Unit: 3732

Finally, with regard to claim 51 applicant argues that the claim is directed to a dental instrument adapted to perform a dental procedure and that the Leins et al and Lund et al references fail to teach the dental use. The examiner notes that the claims are directed to an apparatus, not a method and that the Leins et al drill bit is capable of performing the intended use.

Claims 37-41, 56, 62 and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leins et al (US 5,641,251) in view of Lund et al (US 5,447,208) as applied above and in further view of in view of Kumar (US 2002/0028422).

Kumar teaches that it is desirable to provide hardened coatings on dental burrs having cutting edges in order to improve their resistance to wear and to provide such dental tools with depth marks 44 in order to aid the dentist in determining the depth of the cut. To have coated dental burrs in order to improve their wear with the lio et al hardened coating for tool bits and provided such tools with markings so that the dentist could determine the depth of penetration as is taught by Kumar would have been obvious to one of ordinary skill in the art.

### **Additional Remarks**

Applicant's remarks/amendments of April 15, 2009 regarding the Adefris et al and Shiokawa et al references have been found persuasive and the rejections based on these references withdrawn.

Art Unit: 3732

**Action Made Final**

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry concerning this communication should be directed to **Ralph Lewis** at telephone number **(571) 272-4712**. Fax (571) 273-8300. The examiner works a compressed work schedule and is unavailable every other Friday. The examiner's supervisor, Cris Rodriguez, can be reached at (571) 272-4964.

R.Lewis  
October 26, 2009

/Ralph A. Lewis/  
Primary Examiner, Art Unit 3732